Technology matters

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Dear Reader,

ABB's portfolio is broad and continuously growing. It not only encompasses myriad product families and applications stretching from tiny switches to comprehensive control and electrification systems, but stretches beyond hardware products to system-engineering, diagnosis, service and support capabilities. As the information arm of ABB's research and development organization, *ABB Review* regularly presents reports and insights from across the company's technological spectrum. In the present edition, Technology matters, we are underlying this core aspect of technology by looking at some very different applications.

Photovoltaics have come a long way in recent years. A combination of government incentives, environmental awareness and decreasing prices mean that solar panels on residential properties are becoming increasingly attractive. Besides their smaller size and power rating, one of the main differences setting home installations apart from larger photovoltaic setups is that the average user is not a technician or engineer and hence the interface must be designed to be much more intuitive. ABB's new string inverter does precisely that.

Past editions of *ABB Review* have discussed how power grids will become smarter in view of evolving demands on the transmission and distribution grid. One area of focus involves energy storage as a means of overcoming variations. Pumped hydro storage plants are the only mass-storage technology of any significant scale in existence. The application of modern drives is leveraging the technology further. Looking at a project in Avče (Slovenia), we highlight the contribution these can make.

Further down the distribution chain, an article shows how smart grid technologies can be applied at a distribution level. Stockholm's Royal Seaport is an urban area in which a number of smart grid technologies are being applied. In this article we highlight the impact of adopting intelligent low voltage equipment.

Moving from urban planning to software architecture, we show how ABB is working with methods and tools to make its software sustainable and maintainable. As the functionality of software in products becomes more extensive and sophisticated, the significance of this aspect will increase further.

Remaining in the domain of software, we present a monitoring system that uses artificial intelligence to predict emissions and ultimately to reduce environmental impact. The system has been successfully implemented at one of the largest gas processing plants in the world.

In industrial communications, there is a trend towards the simplification and reduction of wiring. With numerous sensors and actuators distributed across a process plant, wiring is a source of both errors and costs. Wireless communications are already well established, but ABB's new Fieldkey adapter goes one step further and assures wirlessHART connectivity without requiring a separate power supply.

I trust the reading of this issue of *ABB Review* will give you fresh and fascinating insights into the world of ABB's technology.

Enjoy your reading

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